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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,142	07/24/2003	Paul A. Burgio	58359US003	9324
32692 7590 10/09/2007 3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			EXAMINER KRASS, FREDERICK F	
			ART UNIT 1614	PAPER NUMBER
			NOTIFICATION DATE 10/09/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

Application No.

10/626,142

Applicant(s)

BURGIO ET AL.

Examiner

Frederick Krass

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03/28/07 (RCE filed).
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-17, 19-25, 27-32, 34-43 and 45-80 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-17, 19-25, 27-32, 34-43 and 45-80 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 03/28/07.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **Previous Rejections**

Unless specifically repeated/maintained infra, all previous rejections are withdrawn.

New grounds of rejection follow infra, which were not necessitated by applicant's amendment. Accordingly, this action is NON-FINAL.

### **Obviousness Rejection**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1) Claims 1-3, 5, 8-11, 14-17, 19, 22, 30-32, 34, 36-43, 45-64 and 69-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitra et al (USP 5,888,491) in view of Majeti et al. (USP 7,025,950).

The primary reference discloses oral compositions (see column 15, lines 38-52) containing the instantly claimed polymers. When applied as dentifrices, the polymers do not contain pendant ethylenically unsaturated groups, as is clear from the use of the provisional term "may" at column 9, line 59. See also column 16, line 17. See also working example 1 at column 18, wherein the polymer used plainly does not contain any pendant ethylenically unsaturated groups; compare and contrast this with working example 2, where the inventors took additional steps to provide such groups to a UV curable coating (not a dentifrice). Specific groups present in the polymers include fluoride-releasing groups such as 2-N,N,N-trimethylammonium ethyl (meth) acrylate (column 4, lines 41-58) and (meth)acrylic esters of fluoroalkylsulfonamido alcohols, where the (hydrophobic) fluorine moiety has up to 21 perfluoro-carbons (see the table of structural formulae provided at column 5 between lines 23-53).

As is clear from column 19, lines 56-64 of the primary reference, the prior art compositions form hydrophobic coatings on tooth enamel. The compositions are further taught to

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be useful for the administration of other conventional dentifrice components, e.g., therapeutic agents "such as" fluoride salts (column 15, lines 54-63). The primary reference differs from the instant claims, however, insofar as whitening agents such as peroxides are not specifically disclosed.

The secondary reference teaches that hydrophobic polymers which form coatings on tooth enamel are particularly desirable for the delivery of oral care actives, including fluorides and whitening agents, because they facilitate deposition and retention of same. See column 8, lines 42-56. Useful whitening agents are not limited to hydrogen peroxide, and include other peroxides such as carbamide peroxide, as well as peroxyacids, chlorites, etc. (column 9, lines 12-25). The secondary reference differs from the instant claims insofar as it uses particular dicarboxy-functionalized polyorganosiloxanes as hydrophobic coating agents, rather than the specific polymers having fluoride-releasing groups, hydrophobic hydrocarbon groups, graft polysiloxane chains, and/or hydrophobic fluorine-containing groups recited instantly.

It would have been obvious to have used a peroxide whitening agent as the oral care active of the primary reference, since same are known oral care actives as taught by the secondary reference.

2) Claims 6, 7, 12, 13, 20, 21, 23-25, 27-29 and 65-68 are rejected under 35 USC 103(a) as being unpatentable over Mitra et al (USP 5,888,491) in view of Majeti et al (USP 7,025,950), the combination being taken further in view of Aasen et al (USP 4,871,786).

The primary and secondary references and the motivation for combining their teachings are discussed supra. The compositions suggested by their combined teachings differ from those

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of the instant claims insofar as they do not include a fluoride-releasing group comprising tetrafluoroborate ions.

The tertiary reference teaches that fluoride-releasing monomers containing tetrafluoroborate ions are preferred because of their compatibility with virtually all other comonomers. See the passage bridging column 3, line 62 to column 4, line 8. Accordingly, it would have been obvious to have used such monomers in the forming the compositions suggested by the combined teachings of the primary and secondary references in order to take of advantage of this art-recognized property.

3) Claims 30-32, 34, 35, 37-43, 45, 50-52 and 60-80 are rejected under 35 USC 103(a) as being unpatentable over Rozzi et al (USP 5,607,663) in view of Majeti et al (USP 7,025,950).

The primary reference is substantially similar to that applied in subsection "1)" supra, except that it teaches the incorporation of hydrophobic hydrocarbon groups such as octadecylacrylate, which the '491 patent lacked (column 5, lines 40-42). Again, note that the presence of ethylenically unsaturated groups is purely optional, as reflected in the use of the provisional term "may" at column 5, line 49; "can" at column 11, line 43; and "when" at column 12, lines 36 and 46. Again, the prior art discloses dentifrices and teaches the inclusion of oral care actives therein (see the passage bridging column 11, line 60 to column 12, line 19), but differs from the instant claims insofar as peroxide whitening agents are not specifically disclosed.

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The secondary reference is likewise discussed supra. As before, it would have been obvious to have used a peroxide whitening agent as the oral care active of the primary reference, since same are known oral care actives as taught by the secondary reference.

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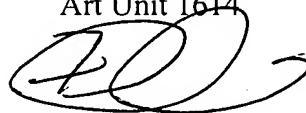
### Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick Krass whose telephone number is (571) 272-0580. The examiner can normally be reached at (571) 272-0580 on Monday through Friday from 9:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel, can be reached at (571) 272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frederick Krass  
Primary Examiner  
Art Unit 1614

A handwritten signature in black ink, appearing to be 'FK', enclosed within a large, loopy circular flourish.